SOLIDAGO DISPERSA (ASTERACEAE: ASTEREAE) REPLACES *SOLIDAGO LUDOVICIANA* AS THE CORRECT NAME

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ABSTRACT

Solidago dispersa Small is the correct name for the species previously identified as *S. ludoviciana* (A. Gray) Small. The species is restricted to east Texas, western Louisiana, southern Arkansas, and the southeastern corner of Oklahoma. A distribution map is provided for *S. dispersa* and taxonomic with nomenclatural summaries for *S. dispersa* and its synonyms, *S. ludoviciana* and *S. strigosa* Small. *Phytologia 91(2): 251-255 (August, 2009).*

KEY WORDS: *Solidago ludoviciana*, *S. dispersa*, Asteraceae.

The correct name for the species generally identified as *Solidago ludoviciana* (A. Gray) Small is *S. dispersa* Small, as interpreted here. The distribution of *S. dispersa* is restricted to east Texas, western Louisiana, southern Arkansas, and the southeastern corner of Oklahoma (Fig. 1). In Oklahoma it is known from only two collections. **McCurtain Co.**: disturbed roadside with windrows of bulldozed trees, 2 mi S and 0.4 mi W of Tom along Hwy 87, 18 Sep 1976, *Taylor & Taylor 23641* (BRIT, OKL); sloughy bank of Cedar Creek, 10 mi N of Broken Bow, 16 Oct 1937, *Hopkins & Cross 2496* (OKL).

In resolving the nomenclature, observations on the morphology of *Solidago dispersa* are critical. Compared to *S. arguta* var. *boottii*, with which it is sometimes confused, the slender, scale-leaved, stoloniform rhizomes of *S. dispersa* are diagnostic. The two are sympatric in an area of northcentral Louisiana and adjacent Arkansas. The map in Fig. 1 is unambiguous and the coherence of the geographic

distribution supports the recognition of *S. dispersa*. The leaves of *S. dispersa* are thicker with denser reticulation (smaller interstices) of tertiary venation, and distal cauline leaves are erect-ascending and basally attenuate (vs. spreading and usually with an abruptly delimited petiole-like base in var. *boottii*). Plants of *S. dispersa* in Texas (except for some counties bordering Louisiana) are completely glabrous below the capitulescence. In Louisiana and Arkansas scattered plants are similarly glabrous but more commonly the lamina of basal and proximal cauline leaves are abaxially strigose-hirsute to hirsute; sometimes both faces have hairy lamina. The proximal and mid-region stems of such hairy-leaved plants commonly are sparsely to moderately hirsute. Plants of *S. arguta* var. *boottii* very rarely have leaves with lamina hairy abaxially (never adaxially) and none has been observed with hairy stems. Morton (1973) also recognized that *S. dispersa* is variable in vestiture.

As noted by Semple (2006, p. 132), "G.H. Morton annotated the type of [*Solidago dispersa*] as possibly being *S. arguta* introgressed with *S. ulmifolia*. The application of the name remains uncertain." The type collection of *S. dispersa*, however, was made in western Louisiana (Sabine Parish, on the Texas border), outside of the range of *S. arguta* but within that of *S. ludoviciana* and in an area where the latter is common.

The roots and lower stem of the type of *Solidago dispersa* were not collected and (fide Small's protologue, p. 476) "The inflorescence is paniculate and very loosely disposed [hence, apparently, the epithet], while the branches of the panicle and the elongated peduncles are filiform or nearly so and quite weak." Small also noted that "It is peculiar in being glabrous or nearly so above and with more or less pubescence on the lower leaves." The vestiture is similar to that of many plants from Louisiana previously identified as *S. ludoviciana*. The inflorescence is uncharacteristic, but plants of a few other collections otherwise typical in morphology for *S. ludoviciana* have elongated peduncles and heads in a 'loosely disposed' inflorescence, appearing more diffusely paniculate than short-pedunculate and strongly secund on spreading branches (e.g., Texas: Wood Co., *Lundell & Lundell 11741* (SMU); Bowie Co., *Correll & Correll 24789* (LL, SMU). These variants are very similar to the type

of *S. dispersa* and the type is thus within both the geographic and morphological bounds of the species. There is no apparent evidence that *Solidago dispersa* hybridizes with *S. ulmifolia*, *S. arguta*, or any other species. *Solidago dispersa* was observed by Cronquist (1980, as *S. ludoviciana*) to be closely similar to *S. arguta* and *S. tarda*. Fernald (1936) used the name *S. ludoviciana* to identify plants now known as *S. tarda* on the Atlantic coastal plain. Taylor and Taylor (1984) identified *S. dispersa* in Texas and Louisiana as *S. salicina* Ell., which in their concept also included *S. patula*.

Solidago dispersa Small, Bull. Torrey Bot. Club 25: 475. 1898. TYPE: U.S.A. Louisiana. No other data, but probably Sabine Parish, 1836–1838, *Leavenworth s.n.* (holotype: NY, internet image). Melines Conkling Leavenworth, an army physician, was stationed in Sabine Parish, Louisiana, in an active phase of his botanical work (1836–1838), during which he corresponded with John Torrey (ca. 25 letters) and sent him many specimens (McVaugh 1947). The type of *S. dispersa* probably was among these collections. Torrey and Gray (1842) cited collections by Leavenworth (and by Josiah Hale, see comments in typification of *S. strigosa* and *S. ludoviciana*) from Louisiana under "var. β" and "var. ε" of *S. boottii* (see comments under *S. strigosa*).

Solidago ludoviciana (A. Gray) Small, Fl. S.E. US. 1198, 1339. 1903. *Solidago boottii* var. *ludoviciana* A. Gray, Proc. Amer. Acad. Arts 17:195. 1882. LECTOTYPE (J.K. Small ex M.L. Fernald 1936, p. 210): U.S.A. Louisiana. No other data, *J. Hale s.n.* (NY 00259711, internet image!). No indication of a type was given in the protologue but Gray (1884, p. 154) noted "W. Louisiana." Most of Hale's Louisiana collections, which began in 1838, were made from the vicinity of Alexandria (Rapides Parish) and sent to Torrey and Gray (Ewan 2005). "Hale's plants were not numbered, and so after Charles Short and others had divided the original specimens and exchanged a portion, the origin ('Louisiana') was often all that accompanied the specimen" (Ewan 2005, p. 2282). Comments following *Solidago strigosa*, a name closely associated with *S. ludoviciana*, explain the lectotypification.

Solidago strigosa Small, Fl. S.E. US. 1198, 1339. 1903. *Solidago arguta* var. *strigosa* (Small) Steyerm., Rhodora 62:131. 1960.

TYPE: U.S.A. Louisiana. No other data, *J. Hale s.n.* (holotype: NY 00259966, internet image; isotype: GH 12437). Three Hale specimens of *Solidago* aff. *arguta* are housed at GH and NY: GH 12437; NY ...711 (identified on the original label as "S. boottii ε?") and NY ...966 (originally identified as "S. boottii between β and ε"), each with an original "Torr. & Gray, Flora N. Amer." label. Gray studied the collections at both herbaria; he observed that NY ...711 was different from the GH collection, noting at the bottom of NY ...711 "My specimen of this is hirsute" and on the GH sheet "The specimen in Hb. Torr. of var. ε? is glabrous." Gray (1884, p. 154) included both specimens in his concept of *S. ludoviciana*, describing the species as having "lower leaves and lower part of the stems sometimes roughish-hirsute or hispidulous with many-jointed hairs, **or glabrous**" [emphasis added].

Small apparently decided that NY ...711 was representative of *Solidago ludoviciana* and annotated it as such. Seeing that NY ...966, was different from ...711, he described ...966 as *S. strigosa*. Small's morphological and geographical descriptions of the two taxa (1903, 1933) support this interpretation. Fernald (1936) provided an account similar to the one here of the three Hale specimens; he also noted that "Small having selected the glabrous plant of Hale to stand as the type of *S. ludoviciana*, that point is satisfactorily settled, the hirsute plant of Hale being *S. strigosa* Small." Fernald's affirmation of Small's choice is taken here as formalization of the lectotypification of *S. ludoviciana*. Morton (1973) also concluded that the types of *S. strigosa* and *S. ludoviciana* are conspecific, despite the difference in vestiture.

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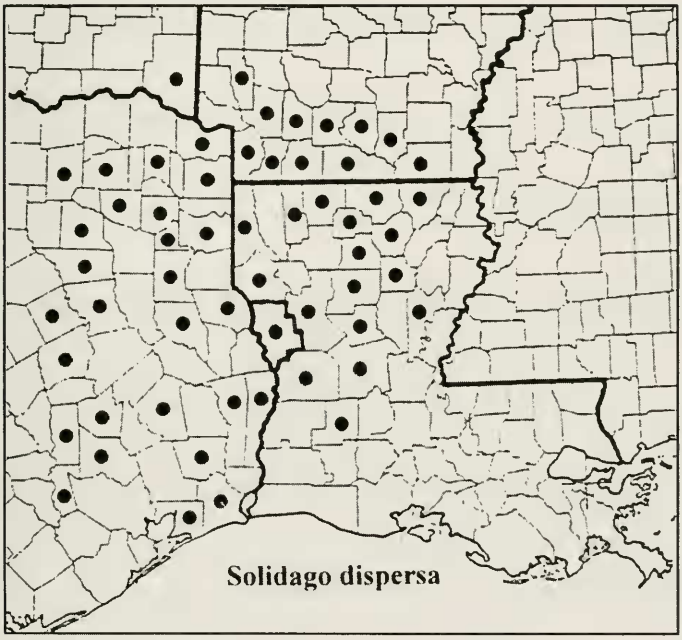

Figure. 1. Distribution of *Solidago dispersa*. Sabine Parish, Louisiana, where the type was collected, is outlined in bold.